

Chapter IV. Factors Affecting Industry Employment and Occupational Utilization, 2006–16

Occupational employment may change over time, for several reasons. For example, an occupation's employment could increase because of growing demand for goods and services produced by industries in which the employment is concentrated. Alternatively, increases in the utilization of an occupation in those industries could boost the occupation's overall employment. This chapter presents information about both categories of factors—those affecting industry employment and occupational utilization within industries—that drive changes in occupational employment.

Industry employment

Many assumptions underlie the Bureau of Labor Statistics (BLS) projections of the aggregate economy and of industry output, productivity, and employment. Often, these assumptions bear specifically on econometric factors, such as the aggregate unemployment rate, the anticipated time path of labor productivity, and expectations regarding the Federal budget surplus or deficit. Other assumptions deal with factors that affect industry-specific measures of economic activity.

Detailed industry employment projections are based largely on econometric models, which, by their very nature, project future economic behavior on the basis of a continuation of economic relationships that held in the past. For the most part, the determinants of industry employment are expressed both in the structure of the models' equations and as adjustments imposed on the specific equations to ensure that the models are indeed making a smooth transition from actual historical data to projected results. However, one of the most important steps associated with the preparation of the BLS projections is a detailed review of the results by analysts who have studied recent economic trends in specific industries. In some cases, the results of the aggregate and industry models are modified because of the analysts' judgment that historical relationships need to be redefined in some manner.

As discussed in chapter II, the 2002–12 projections were the first to incorporate the 2002 North American Industry Classification System (NAICS). Table IV–1 presents historical and projected information about employment and output for aggregate and detailed industries. Industry sector employment projections prepared in the Division of Industry Employment Projections (DIEP) used a comprehensive modeling technique that estimates output as well as employment. More detailed industry employment pro-

jections based on historical time series information are included in the matrix and are consistent with their parent industry sector; however, projections of output were not developed for these industries. Specific factors that underlie the projections of industry employment for DIEP sectors are presented in table IV–2 to allow the user to better understand the rationale behind projected changes in industry employment and output.

Occupational utilization

BLS projections of wage and salary employment are developed within the framework of an industry-occupation matrix, which shows the occupational distribution in each industry—the proportion of each industry's employment which each occupation comprises. Historical data indicate that the occupational distribution within industries shifts over time as the utilization of some occupations changes relative to that of other occupations.

Among the various factors that can affect the utilization of workers in an occupation in particular industries are technology, business practices, the mix of goods and services produced, the size of business establishments, and offshore outsourcing to lower-wage foreign countries. BLS staff analyze each occupation in the matrix to identify the factors that are likely to cause an increase or decrease in utilization of the occupation within a particular industry in the future. The analyses incorporate judgments about new trends that may influence occupational utilization, such as the use of the Internet and electronic commerce. Table IV–3 contains brief descriptions of the factors underlying changes in occupational utilization within industries projected to occur between 2006 and 2016. Occupations appear in order by Standard Occupational Classification code. Although all detailed occupations were analyzed, utilization of many occupations was projected to remain unchanged. These occupations are not included in the table. In addition, factors are discussed only for those industries with the highest share of an occupation's employment.

In developing the projections, BLS staff made hundreds of analytical judgments of the kind set forth in the preceding paragraph. To maintain consistency among analysts, guidelines for changing the proportion of an industry's employment which an occupation comprises were established as follows: small change = ± 10 percent; moderate change = ± 20 percent; large change = ± 35 percent; very large change = ± 50 percent.